

REMARKS

Consideration and allowance of the subject application are respectfully requested.

Claims 8-22 are pending in the application. Basis for the amendment to claim 8 can be found in the originally filed application including at original claim 2. Claims 8 and 10-12 have been amended to address minor informalities. No new matter has been added.

In response to the objection to the information disclosure statement at paragraph 1 on page 1 of the Office Action, submitted herewith is a copy of each cited foreign patent documents. Accordingly, entry of the Information Disclosure Statement is respectfully requested.

In response to the objection to the drawings, Fig. 5a and 6a have been amended to identify the structure shown in the original Figs. as "h" (height), "r" (bend radius), and "L" (radial length). No new matter has been added. Entry of amended Figs. 5a and 6a is respectfully requested. Withdrawal of the objection to the drawings is respectfully requested.

The objections to claims 8 and 10-12 at paragraph 3 in the Office Action is obviated by the amendment to the claims as set forth above. Accordingly, withdrawal of the objection to claims 8 and 10-12 is respectfully requested.

The rejection of claims 8-14 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,637,924 (Pelka) is respectfully traversed. The claimed invention is not anticipated by Pelka for the following reasons.

Pelka only discusses uniform illumination of extended light sources. In contrast, the present invention relates to edge illuminated signs of any form carrying information in the form of light reflecting figures on the rear side which reflects the light through the front side.

Pelka does not disclose the claimed rear side comprising figures. For this reason alone, the Section 102 rejection should be withdrawn.

Pelka discloses an illumination apparatus consisting of an elongated waveguide having a convex front side, a rear side and at least one light-emitting element arranged adjacent a side surface of said waveguide. The illumination

apparatus shown in Pelka may at first blush look like the sign of the present invention, but Pelka only teaches extended light sources such as neon tubes and chemiluminescent light sticks that must be substantially uniformly lit. Pelka does not disclose figures and it is evident from the description that Pelka is not intended to be used in combination with figures, since the problem to be solved is the problem of obtaining a uniform illumination of the sign. In order to obtain a uniform illumination of the sign, the illumination apparatus in Pelka contains optical collimating elements (44, 46 in Fig. 2) or a non-imaging optical element (70 in Figs. 11-15). These serve to collimate the light from the LED's so that the light passes the whole length of the waveguide and is reflected by the reflective side surface 22 towards a reflective rear surface 18, thereby enable a uniform illumination from the waveguide, see col. 9, lines 11-19 and 37-40. As is clear from Pelka's description, it is desired that "at least about half the light from the LEDs propagates through the waveguide....." (col. 7, lines 11 -17). It is also discussed the benefit of multiple passes, i.e. "one complete round trip" (col. 9, lines 20 – 40) which suffices a collimation of the light. Therefore, the waveguide in Pelka has to be a rod with a reflective surface at the end opposite the light-emitting element.

In contrast, in the present invention, it is not an object to provide a uniform illumination. Instead, it is an object to improve the viewing angle and to obtain an optical magnification of the figures applied on the rear side of the sign. While Pelka discusses magnification of the planar surface (e.g. col. 10 lines 17 – 19 and 49 – 51) Pelka still does not disclose reflecting figures on the rear side. Furthermore, those skilled in the art would understand from the description that the sign in Pelka is not intended to be used with figures applied on the rear side **since the rear side can be formed with recesses or can be convex in order to even further improve the field of view**, see Figs. 5 -10 and col, whereby one part of the rear side will be **invisible** to the viewer (e.g. col. 11, lines 24 -25) at certain viewing angles.

The sign of the present invention does not contain collimating means. In the example shown in Fig. 2 and 3a, light-emitting appliances are shown at both ends when the sign has the form of a rod with two side surfaces. In a split sphere example as shown in Fig. 6a, collimating means would result in less illumination since the collimated light beams hitting the spherical surface opposite the LEDs would pass through the surface, i.e. the internal reflection towards the rear side would decrease

and the reflection from the figures would be affected.

In view of the many differences between the claimed invention and Pelka, Pelka does not anticipate the claimed invention and the Section 102 rejection should be withdrawn.

The rejection of claims 15-22 under 35 U.S.C. § 103 as being unpatentable over Pelka in view of U.S. Patent No. 2,297,851 (Wyss) is respectfully traversed. The claimed invention is not obvious over Pelka in view of Wyss for the following reasons.

In paragraph No. 11, the Examiner argues that it would be obvious to combine Pelka and Wyss to thereby obtain a sign having a lighting appliance that includes a casing concealing the light-emitting element.

As discussed above, Pelka does not disclose the claimed rear side comprising figures. Wyss also does not disclose the claimed rear side comprising figures. Thus, the combination of Pelka and Wyss cannot teach or suggest the claimed rear side comprising figures. For this reason alone, the Section 103 rejection should be withdrawn.

Pelka shows a non-imaging optical element (70) and Wyss shows a light reflecting chamber (12), which both serve to conceal the light-emitting element, and there is no need to combine them to arrive at that solution. However, their function is not exactly similar.

In Pelka, the non-imaging optical element (70) serves to collimate the beams so that they will pass to the opposite side surface and be reflected towards the reflective rear side. As discussed above, collimating the beams is important in regards to the technical solution of the problem of providing an illumination apparatus with a uniform illumination.

In Wyss, the reflecting chamber (12) serves to direct the beams to the upper focusing point where the edge of the sign is placed in order that substantially all of the available light will be directed into the edge of the panel. In Wyss, there is no discussion of any problems of leakage of light neither at the front side close to the light emitting element nor from the edges.

Applicant submits that Wyss is less close to the present invention than the references mentioned as prior art in the present application. Wyss relates to flat edge illuminated signs but does not address the problem of leakage of light nor does

the sign in Wyss contain figures on the rear side. Pelka also does not address the problem of leakage of light nor does Pelka contain figures on the rear side. The object of the present invention, i.e. the improvement of the viewing angle and magnification of the figures, has not been addressed by either of the cited references alone or in combination.

In regard to Pelka, the sign of the present invention contains the new feature that the rear side comprises figures that reflects the light from the lighting appliance through the front side of the electric sign. A combination of Pelka with Wyss would result in a sign having figures on the front side, which teaches away from the claimed invention. For this reason alone the Section 103 rejection should be withdrawn.

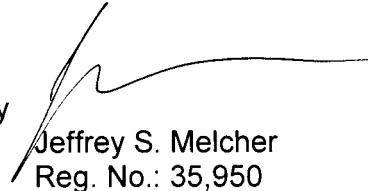
The proposed combination of Pelka and Wyss also does not teach or suggest the claimed invention for the following reason. Collimating beams applied to the sign in Wyss would result in a significant leakage of light from the opposite edge and thus a very weak illuminated sign would appear. See particularly col. 6, lines 57 – 62 in Pelka where it is stated that a longer and narrower waveguide would require a more collimated or less divergent beam to achieve good uniformity over the length of the lighting apparatus. In order to avoid the leakage from the edges they would have to be covered by a reflective layer, as proposed in Pelka. The result is not a sign according to the present invention.

In view of the many differences between the claimed invention and the theoretical combination of cited references, withdrawal of the Section 103 rejection is respectfully requested.

Applicant submits that all of the objections and rejections have been addressed and that the application is in condition for allowance. Notice of Allowance is respectfully requested.

Respectfully submitted,
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